# CORRECTION AND EXTENSION OF THE RELATIONSHIP OF INTERPERSONAL PERCEPTION TO EFFECTIVENESS IN BASKETBALL TEAMS

Fred E. Fiedler, Walter Hartmann, and Stanley A. Rudin
College of Education, University of Illinois

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# CORRECTION AND EXTENSION OF THE RELATIONSHIP OF INTERPERSONAL PERCEPTION TO EFFECTIVENESS IN BASKETBALL TEAMS*

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An earlier paper described an exploratory and a validation study on high school basketball teams (1). This supplementary report has as its purpose (a) to present further data on the relation of interpersonal perception to effectiveness of basketball teams, and (b) to correct a computational error in the previous report.

The original paper investigated whether certain interpersonal perception measures are related to group effectiveness in the basketball situation. Interpersonal perception was measured by means of Assumed Similarity (AS) scores. These are designed to indicate how similar one person considers himself to be to others, or how similar he considers two other persons to be.

Fourteen high school basketball teams were tested at the beginning of the 1951 season. Two promising relations found in this exploratory study involved the scores ASp, Assumed Similarity to the preferred work-companion, and ASo, Assumed Similarity between the opposites (i.e., between the most and the least preferred work-companions).

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When we correlated the median AS scores of team members with the criterion, we found no relation. However, promising correlations were found when we used only the AS scores from the person whom most team members chose as their preferred co-worker.

Since the first study was used to identify hypotheses for testing, we attempted to validate the relations involving ASp and ASo on a second sample of 7 "good" and 5 "poor" teams which were tested toward the end of the season. This second sample was selected on the basis of team standings as of February 18, 1952, and tested in the latter part of February. The good teams were chosen from among the upper third, the poor teams from among the lower third of 50 high school basketball teams in Illinois.

## Erratum

Table 1 of Technical Report No. 3 lists the correlation of ASo with the December 15 criterion in the first sample as -.78. This correlation was actually -.53. As will be discussed below, our final conclusions are not materially affected by this error.

## Additional Analyses of Basketball Data

### Validities Determined for Additional Criterion Dates

In addition to the dates closest to the time of testing, we utilized two additional criterion dates. (See Figure 1.)The first of these was an early criterion date, December 31, 1951, when all teams had played 8-12 games. The second was the end-of-season record, based on the proportion of league games a team had won. Teams play each other in leagues of about 10 schools which are matched for size and which are in the same geographical area. The criterion which is least affected by variables extraeneous to team effectiveness thus appears to be the proportion of league games won over the season.

Table 1 presents the correlations between the most preferred co-workers' ASp and ASo and the three criteria. As reported in Technical Report No. 3, the measure ASp was not consistently related to team effectiveness. All correlations involving ASo are negative, but in the validation sample only one of the correlations (with the criterion close to testing) is significant. The data do indicate consistent negative relation between ASo of the most preferred co-worker and team effectiveness.

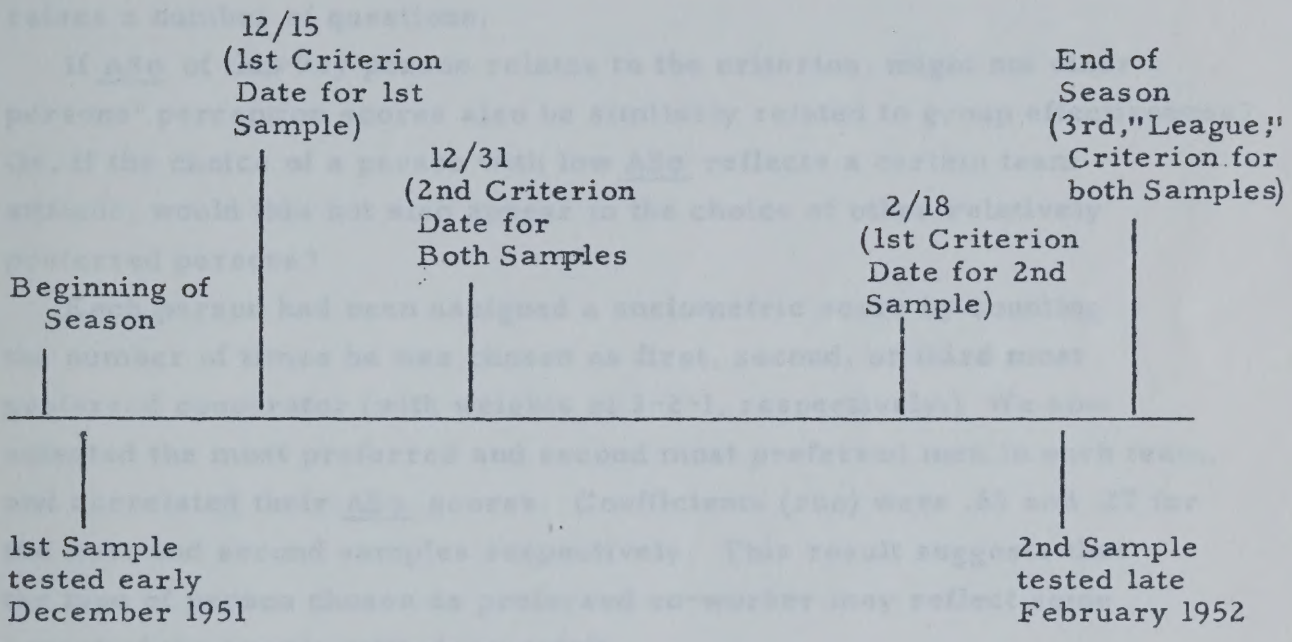
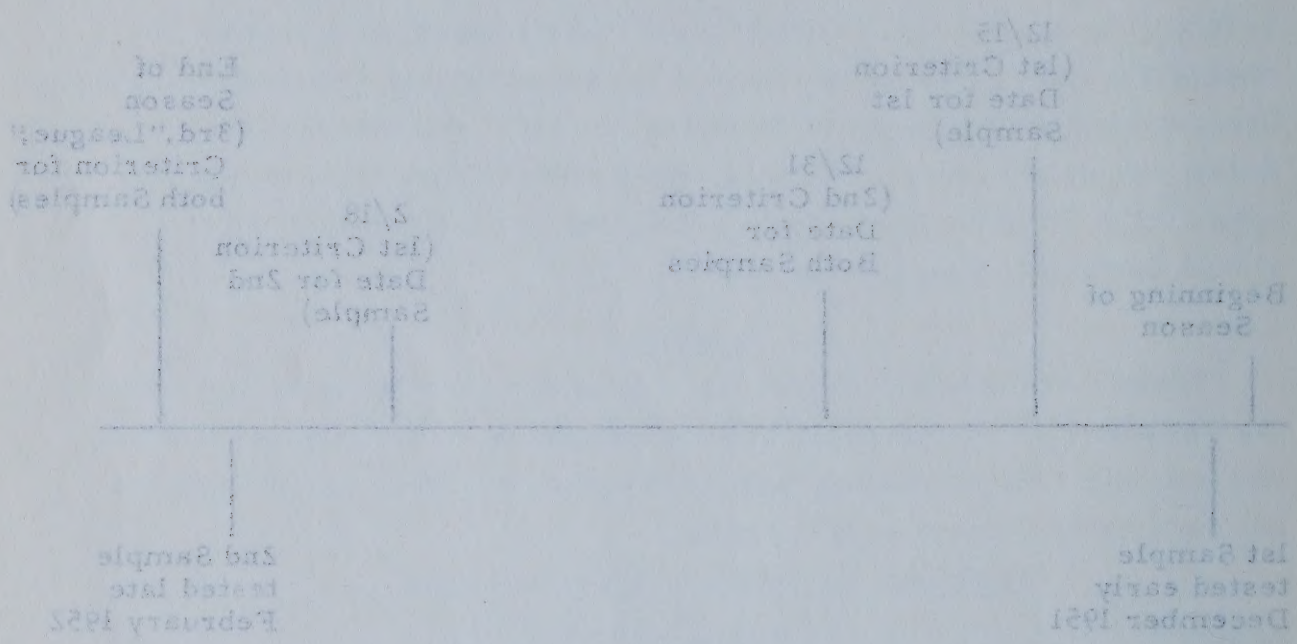



Figure 1

The Time Relations of Testing Sessions to Criterion Dates for the Two Samples

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Additional Analyses of ASo Scores

We reported in Technical Report No. 3 that the median ASo score of members of a team was unrelated to the team's effectiveness. We did find a relation with the criterion, however, when we correlated the ASo scores of the most preferred co-worker in a team. This finding raises a number of questions.

If ASo of this key person relates to the criterion, might not other persons' perception scores also be similarly related to group effectiveness? Or, if the choice of a person with low ASo reflects a certain team attitude, would this not also appear in the choice of other relatively preferred persons?

Each person had been assigned a sociometric score by counting the number of times he was chosen as first, second, or third most preferred cooperator (with weights of 3-2-1, respectively.) We now selected the most preferred and second most preferred men in each team, and correlated their ASo scores. Coefficients (rho) were .63 and .27 for the first and second samples respectively. This result suggests that the type of person chosen as preferred co-worker may reflect some aspect of the team's attitude or spirit.

We further hypothesized that the effective team, compared to the less effective team, will be more likely to choose low ASo people. To test this hypothesis we weighted every person's ASo score by his sociometric standing. To estimate a team's general tendency to choose according to high or low ASo of the team members, we computed the teams' "Weighted ASo Score" by the formula

$$\frac{\Sigma\,(St \cdot ASo)}{\Sigma\,St} = \text{Team's Weighted ASo Score}$$

where St = a person's weighted sociometric status

ASo = a person's ASo score.

The rank order correlations of these teams' weighted ASo scores with the final criterion of league games won over the season were -.50 for the first sample, .15 for the second. Neither is significant. Thus, the attempt to increase our prediction of group effectiveness by using more information failed.

TABLE 1

CORRELATIONS BETWEEN AS SCORES OF MOST PREFERRED CO-WORKERS AND CRITERIA AT DIFFERENT POINTS IN THE SEASON

| First Sample N=14 | ASp | ASo |
|---|---|---|
| Dec. 15* | -.73 | -.53 |
| Dec. 31 | -.64 | -.69 |
| League games, entire season | -.48 | -.44 |

| Second Sample N=12 | ASp | ASo |
|---|---|---|
| Dec. 31 | .05 | -.58 |
| Feb. 18* | -.20** | -.38** |
| League games, entire season | .14 | -.35 |

* Dates nearest to time of testing

** Point biserial correlations. All other correlations are Rho.

Criterion Reliability

The criterion in this study consisted of the proportion of games a team had won as of a certain date. We originally used December 15 for our first sample, and February 18 for our second sample, since these dates were closest to the time of testing.

In studies of this nature, it is of considerable importance to obtain an estimate of the reliability of the criterion. This was done here by correlating the proportion of games won during the first half of the season with the proportion of games won during the second half of the season. The reliability estimate as of the end of season, corrected by the Spearman-Brown formula, was .62 for the first sample, and .88 for our second sample of teams. These reliability coefficients are based on samples of 14 and 12 teams respectively. (The second group was selected from the extremes of the distribution.) It was desirable to obtain a more stable estimate of reliability. Therefore, we computed the coefficient for the entire population of 50 Central Illinois teams from which all but three teams in our sample had been chosen. This coefficient is .82. The criteria for this study thus possess adequate reliability.

## Discussion

We have made a number of additional analyses of the data collected on basketball teams. These provide some further insights into the functioning of effective and relatively ineffective teams.

The original analysis indicated that the interpersonal perception scores of the most preferred co-workers were correlated with team effectiveness. This finding would mean that some element in the entire team's effectiveness is measurable if we test the attitudes of only one of its members.

We had hoped that the use of scores from more than one team member would provide a more reliable predictor or index of team effectiveness. However, neither a median nor a sociometrically weighted ASo score yielded useful results.

Table 1 shows that the correlation of ASo of the preferred co-worker with team standing is higher for standing at the time of testing than at a much later or earlier date. These fluctuations may be due to sampling

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Discussion

We have made a number of additional analyses of the data collected on basketball teams. These provide some further insights into the functioning of effective and relatively ineffective teams.

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We had hoped that the use of scores from more than one team member would provide a more reliable predictor or index of team effectiveness. However, neither a median nor a sociometrically weighted $\overline{ASo}$ score yielded useful results.

Table 1 shows that the correlation of $\overline{ASo}$ of the preferred co-workers with team standing is higher for standing at the time of testing than at a much later or earlier date. These fluctuations may be due to sampling

errors. It is also possible, however, that the relations become weaker as the interval between testing and the criterion date increases. (Figure 1 diagrams the time relations involved). As time elapses, preference in the team may shift from a person with low ASo to one with higher ASo, and vice versa. Obviously, a longitudinal study of a group would be required to investigate such suggestions.

In light of the data obtained on basketball teams thus far, we reach the following conclusions:

1. The criterion reliability of basketball effectiveness, as here measured, is very high, and recommends the use of these teams for other studies of group effectiveness.

2. ASo of the most preferred team members correlated negatively with basketball team effectiveness in these two samples. While the relations are promising we do not consider them as established by the study of our two samples, since a number of tests were computed even in the validation sample.

3. The relation of ASo with the criterion is less as we use the scores of team members other than the most preferred co-worker. We hypothesize here that the choice of a co-worker with low or high ASo expresses the team's spirit or attitude toward the task.

## Reference

1. Fiedler, F. E., Hartmann, W., and Rudin, S.A. The relationship of interpersonal perception to effectiveness in basketball teams. Champaign-Urbana, Illinois. 1952. (Mimeographed. Technical Report No. 3, Contract N6ori-07135 between the University of Illinois and the Office of Naval Research.)

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